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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/647,977	08/25/2003	Barry D. Kuban	895,675-004	2832

34263 7590 03/20/2007
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EXAMINER

CHENG, JACQUELINE

ART UNIT	PAPER NUMBER
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3768

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/20/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/647,977

Applicant(s)

KUBAN ET AL.

Examiner

Jacqueline Cheng

Art Unit

3768

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date See Continuation Sheet.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :8/27/03 6/1/04
9/24/04 9/12/05 2/1/06.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 1, 6, 7, 11, 14 and 16** are rejected under 35 U.S.C. 102(b) as being anticipated by Seo (US 4,501,279). Seo discloses a ultrasonic blood flow sensing apparatus comprising a probe that gathers blood-vessel data, an electrocardiograph circuit for acquiring heart beat data, and data-gathering and processing devices (the diagnosis equipment, rams, and ALU). The RAMs of apparatus collects and stores the ECG data and sets a period to be sampled such as a cyclical portion of the heartbeat data, to be sampled over a period of N cardiac cycles. The RAM then samples and stores blood flow data according to this sampling period (abstract, col. 2 line 45-col. 3 line 15, col. 4 line 10-30).

3. **Claims 1-3, 5-17 and 19-40** are rejected under 35 U.S.C. 102(b) as being anticipated by Slager (US 5,771,895). Slager discloses a catheter system and method to obtain image data of a blood vessel. Blood vessel data is gathered by a data gathering sheathed IVUS catheter that has an automatic pull back device which can retract the catheter at a constant speed (col. 6 line 13-22). The elongate sheath has a lumen that is shaped to house a transducer in the distal region to permit both rotation and longitudinal translation of the transducer (col. 6 line 50-55). The rotational orientation of the transducer can also be identified (col. 3 line 50-54). The blood vessel

Art Unit: 3768

data can be electrocariographic-gated in order to acquire the data during an interval substantially corresponding to a cyclical portion of the heartbeat data such as end-diastole portion of the heartbeat (col. 5 line 14-25). Also during image reconstruction, the rotational orientation of the IVUS image is adjusted to obtain an optimal 3-D reconstruction (blood vessel data acquired when the transducer is oriented in a predetermined position, col. 3 line 40-42). All this information and data are collected, stored and manipulated on a data-gathering device such as a programmable computing device (col. 9 line 26-27).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 4 and 41** are rejected under 35 U.S.C. 103(a) as being unpatentable over Slager in view of Vince (US 6,200,268 B1). Slager does not disclose a plurality of transducers spaced circumferentially, but it would be obvious to one skilled in the art to use any comparable IVUS system with the system of Slager. Vince discloses such an IVUS system that comprises an array of transducers circumferentially positioned (col. 3 line 50-53) so therefore it would be obvious to one skilled in the art at the time of the invention to combine Vince with Slager to further the utility of Vince to obtain data from any angle of the blood vessel without having to spend time rotating the catheter to position the transducer in the correct direction.

Art Unit: 3768

6. **Claim 18** is rejected under 35 U.S.C. 103(a) as being unpatentable over Slager. Although Slager does not explicitly disclose computer code being adapted to identify the speed at which the retraction device is moving the transducer, the computer is capable of being adapted to do so as it already has all the information needed to calculate this speed. The computer knows the distance of the pull-back as well as the time between each pull back (by using the information given from the ECG). It would be obvious to adapt the computer to calculate the speed to be able to derive the transducer positions at any point in time (col. 7 line 39-43, col. 12 line 1-5)

Conclusion

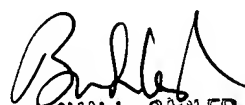
7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacqueline Cheng whose telephone number is 571-272-5596. The examiner can normally be reached on M-F 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eleni Mantis-Mercader can be reached on 571-272-4740. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3768

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JC


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